

26.2/20

S/096/60/000/012/003/008
E194/E484

AUTHORS: Kozlov, I.A. and Lebedev, I.V., Engineers

TITLE: An Experimental Investigation of the Elastic-Plastic Condition of Turbine Discs

PERIODICAL: Teploenergetika, 1960, No.12, pp.23-27

TEXT: In recent years there have been a good many theoretical works on the calculation of the elastic-plastic condition of turbine discs but they only approximately represent the performance of the material because they are based on certain assumptions and have not been checked experimentally on discs. Accordingly, tests were made on discs using the tensiometric transducers developed by the authors to investigate the stress conditions of discs during elastic deformation. The strain gauges were made of constantan wire on paper and had a resistance of 170 ohms and a length of 20 mm. The method of calibrating the strain gauges is explained. A typical calibration curve of a strain gauge is shown in Fig.1, difficulty was experienced if the strain was greater than 1.7%. The discs tested are illustrated in Fig.2; in addition to the usual slots they had three pressure equalizing holes and a central Card 1/4

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aperture for the shaft, they were made of steel grade 3M-415 (EI-415). The strain gauges were fitted at the edge of the internal groove in the disc and at the edges of the eccentric holes where the greatest strain occurs on rotation. Special care is required in fitting strain gauges to discs running at speeds up to 14000 rpm. The tests were carried out on the special high-speed rig in the Institute of Cermets and Special Alloys of the Academy of Sciences UkrSSR. The moving contacts of the thermocouples were through mercury baths. The electrical connection arrangements are illustrated diagrammatically in Fig.3. The instrumentation and necessary corrections are discussed. Graphs of the tangential and radial strains of a disc are plotted in Fig.4, the dotted lines show theoretical values of strain at the corresponding radius, the formula used for their calculation is given. In the region of elastic-strain the calculated values of strain are in sufficiently good agreement with the experimental and the greatest difference does not exceed 9%. Lines showing the

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of Turbine Discs

limits of the elastic-plastic conditions of the disc are also plotted on Fig.4. The upper boundary of the elastic-plastic condition was determined on the basis of the theory of maximum tangential stresses and on this basis a formula is derived for the critical speed. Above 9000 rpm there was considerable increase in tangential strain as compared with the calculated values although the disc was still in the elastic condition. This is explained by the reference to the shape of the tension curve of the steel used. At a speed of about 12000 rpm, tangential strain of the disc at the place of test increases considerably and noticeable flow of the material commences. Fig.4 also shows the strain curve when unloading the disc. Fig.5 shows the relationship between the strain in the zone of stress concentration and the speed for a strain gauge located radially on the disc. Fig.5 also shows a line corresponding to the speed of the disc at which plastic strain commences at the edge of the hole. Evident flow of the material

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of Turbine Discs

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commenced at a speed of about 13000 rpm. Fig. 5 also shows the
unloading curve. There are 5 figures and 4 Soviet references.

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR
(Institute of Cermets and Special Alloys AS UkrSSR)

Card 4/4

LEBEDEV, I.V., kand.tekhn.nauk

Graphoanalytical method for plotting velocity fields of a
uniform flow in case of a sudden unilateral widening of the
channel. Gidr.stroi. 30 no.7:39-43 J1 '60.
(MIRA 13:7)

(Hydraulics)

LEBEDEV, Igor' Vasil'yevich; IZBASH, S.V.; prof.; doktor tekhn.
nauk, ref.

[Spread of a flow in a limited space] Rasshirenie potoka
v ogranichenom prostranstve. Moskva, Mosk. energetiche-
skii in-t, 1963. 53 p. (MIRA 17:8)

ZHILEYKO, Georgiy Ivanovich, dots.; LESEDEV, I.V., prof.,
retsenzent; MARKOV, G.T., prof., retsenzent;
FEDOROV, N.N., dots., retsenzent; VZYATYSHEV, V.F.,
assisten, red.;

[Interaction between electrons and an electromagnetic
field] Vzaimodeistvie elektronov s elektromagnitnym
polem. Moskva, Energ. in-t, 1963. 55 p.

(MIRA 18:1)

1. Kafedra teoreticheskikh osnov radiotekhniki Moskov-
skogo energeticheskogo instituta (for Zhileyko).

CHUGAYEV, Roman Romanovich, prof., doktor tekhn. nauk; LEBEDEV,
I.V., red.; SOBOLEVA, Ye.M., tekhn. red.

[Hydraulics] Gidravlika. Moskva, Gosenergoizdat, 1963.
527 p. (MIRA 16:12)

(Hydraulics)

PISARENKO, G.S., prof., doktor tekhn. nauk; KOZLOV, I.A., kand. tekhn. nauk;
LEMEDEV, I.V., inzh.

Reliable deformation of a rotating disc. Energomashinostroyeniye
9 no.3:26-28 Mr'63. (MIRA 1715)

1. Chlen-korrespondent AN UkrSSR (for Pisarenko).

KOZLOV, I.A., kand.tekhn.nauk; BAZHENOV, V.G., inzh.; LEBEDEV, I.V., inzh.;
MATVEYEV, V.V., inzh.

Effect of stress concentrators on the strength of rotating discs.
Energomashinostroenie 10 no.1:35-37 Ja '64. (MIRA 17:4)

AKSARIN, A.V.; ANAN'YEV, A.P.; BENEDIKTOVA, R.N.; GORBUNOV, M.G.; GRATSIANOVA, R.T.; YEGOROVA, L.I.; IVANIYA, V.A.; KRAYEVSKAYA, L.N.; KRASNOPYEVA, P.S.; LEBEDEV, I.V.; LOMOVITSKAYA, M.P.; POLYTAYEVA, O.K.; ROGOZIN, L.A.; RADCHENKO, G.P.; RZHONSNITSKAYA, M.A.; SIVOV, A.G.; POMICHEV, V.D.; KHALFINA, V.K.; KHALFIN, L.L.; CHERNYSHEVA, S.V.; NIKITINA, V.N., redaktor; GUROVA, O.A., tekhnicheskiiy redaktor

[Atlas of leading forms of fossils in the fauna and flora of Western Siberia] Atlas rukovodivashchikh form iskopaemykh fauny i flory zapadnoi sibiri. Pod red. L.L.Khalfina. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po geologii i okhrane nedr, Vol.1. 1955. 498 p. Vol.2. 1955. 318 p. [Microfilm] (MLRA 9:3)

1. Tomsk. Politekhnichestskiy institut imeni Kirova.
(Siberia, Western--Paleontology)

LEBEDEV, I. V.

USSR/ Geology - Devonian period formations

Card 1/1 Pub. 22 - 38/50

Authors : Lebedev, I. V.

Title : The Devonian formation of the south-eastern section of the Chulymo-Yenisei depression

Periodical : Dok. AN SSSR 100/1, 143-145, Jan. 1, 1955

Abstract : The geological characteristics of the Devonian period formation discovered in the south-eastern section of the Chulymo-Yenisei depression are briefly described. Six Russian and USSR references (1893-1937).

Institution : Acad. of Sc., USSR, West Siberian Branch, Mining-Geological Institute

Presented by: Academician N. M. Strakhov, October 4, 1954

LEBEDEV, I. V.

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7,
p 14 (USSR) 15-1957-7-8969

AUTHOR: Lebedev, I. V.

TITLE: Mesozoic of the Kuznetsk Basin (Mezozoy Kuznetskoy
kotloviny)

PERIODICAL: V sb. Vopr. geol. Kuzbassa, 1, Moscow, Ugletekhizdat,
1956, pp 221-233

ABSTRACT: Triassic rocks of the Kuznetsk basin are the Mal'tsev-
skiy series, clearly divisible into two subgroups com-
posed of sandstones, siltstones, argillites, tufface-
ous rocks, limestones, and conglomerates. On the ba-
sis of fauna and flora content, the age of the lower
sequence is identified as Lower Triassic; fossils are
absent in the upper layers except for phyllopod crus-
taceans in the lowest part. Apparently these beds are
not older than Middle Triassic. Jurassic deposits of
the Kuznetsk basin consist of a conglomeratic series

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15-1957-7-8969

Mesozoic of the Kuznetsk Basin (Cont.)

composed of sandstones, siltstones, argillites, conglomerates, and coal layers. Many plant imprints are found in shales. Four formations are differentiated on the basis of the plant remains and the nature of the coal (from the base upward): Karaldinskiy (Barashevskiy, Sartakovskiy, Chusovitinskiy, and Tersyukskiy. The plant imprints established the age of the Karaldinskiy formation as no younger and no older than Lower Jurassic; Sartakovskiy is probably Middle Jurassic; organic remains have not yet been found in the Chusovitinskiy formation; and the Tersyukskiy formation contains Upper Jurassic plant remains. According to N. I. Novozhilov, phyllopod crustaceans in the Tersyukskiy formation also attest to its Upper Jurassic age. Cretaceous rocks are represented by red beds in the central regions of the Kuznetsk basin, in its southern part, and in the Kemerovo region, but by kaolinized gray rocks in the Anzhero-Sudzhenskiy region and in the Chumysh River basin. The Cretaceous age of the kaolinized rock is established by the discovery of plant remains and the

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Mesozoic of the Kuznetsk Basin (Cont.)

15-1957-7-8969

age of the red beds by comparison with other regions.
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I. N. Krylov

lebedev, I.V.
LEBEDEV, I.V.

Tectonics of the eastern and southeastern edge of the West-Siberian
Lowland, Trudy Gor.-geol. inst. Zap.-Sib. fil. AM SSSR no.15:27-37
'56. (MIRA 11:1)

(Siberia, Western--Geology)

LEBEDEV, I.V., Doc Geol Min Sci — (diss) "The continental
mesozoic eastern part of West Siberia." Tomsk, 1958, 3h 14;

3 sheets of diagrams and maps (Min of Higher Education
USSR. Tomsk Order of Labor Red Banner Polytechnic Inst
im S.M. Kirov. Chair of Historical Geology) 100 copies
(KL, 27-58, 10h)

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LEBEDEV, I.V.

Cretaceous sediments in the Chulym-Yenisey Lowland. Izv. TPI
90:3-11 '58. (MIRA 12:2)

1. Predstavleno professorom doktorom L.L. Khalfinym.
(Chulym-Yenisey Lowland--Geology, Stratigraphic)

LEBEDEV, I.V.

Mesozoic Pelecypoda from the Chulym-Yenisey Lowland. Trudy
VNIGRI no. 124:41-94 '58. (MIRA 16:7)

(Chulym-Yenisey Basin---Lamellibranchiata, Fossil)

LEBEDEV, I.V., otv.red.vypuska; KAS'YANOV, M.V., glavnyy red.;
GURARI, F.G., zamestitel' glavnogo red.; AMSHINSKIY, N.N., red.;
ARUSTAMOV, A.A., red.; DERBIKOV, I.V., red.; KAZARINOV, V.P.,
red.; KALUGIN, A.S., red.; MALIKOV, B.N., red.; MIKUTSKIY, S.P.,
red.; ROSTOVTSEV, N.N., red.; SUKHOV, S.V., red.; TESLENKO, Yu.V.,
red.; UMANTSEV, D.F., red.; SAFRONOVA, I.M., tekhn.red.;
RAGINA, G.M., vedushchiy red.

[Biostratigraphy of Mesozoic and Tertiary sediments in Western
Siberia] Biostratigrafiia mezozoiskikh i tretichnykh otlozhenii
Zapadnoi Sibiri. Moskva, Gostoptekhizdat. Vol. 1. 1962. 590 p.
Vol. 2. [Atlas of paleontological plates and their explanations]
Atlas paleontologicheskikh tablits i ob"iasneniia k nim. 1962.
128 plates. (Its Trudy, no.22). (MIRA 17:4)

L 42295-66 EWT(1)/EWT(m)/I/EWP(t)/ETI IJP(c) AT/JD
 ACC NR: AP6022498 SOURCE CODE: UR/0054/66/000/001/0028/0033
 AUTHOR: Lebedev, I. V.; Pavinsky, P. P. 39
 ORG: none B
 TITLE: Kinetics of exitons and holes in a crystal of cuprous oxide 11 11
 SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii,
 no. 1, 1966, 28-33
 TOPIC TAGS: kinetics, exciton, cuprous oxide, crystal
 ABSTRACT: The article reports an investigation of the kinetics of
 exitons and holes in a cuprous oxide crystal, when the exciton mechanism
 of light absorption is considerable. Expressions are derived for the
 photoconductivity and the photoelectromotive force brought about by the
 presence of defects. The flow of exitons in Cu_2O may be considered as
 purely diffusional, since as a result of inverse symmetry, the true
 dipolar moment of the exitons is absent. The article distinguishes
 between exitons with a small radius, to which, in the hydrogen model,
 corresponds a main quantum number $n = 1$, and exitons with a large radius
 and $n = 2, 3$, etc. The article is mainly taken up with a mathematical
 development of the subject, ending with derivations of the above
 Card 1/2 UDC: 537.312.5

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ACC NR: AP6022498

mentioned expressions for the photoconductivity and photoelectromotive force. Orig. art. has: 35 formulas.

SUB CODE: 20/ SUBM DATE: 08Oct65/ ORIG REF: 003/ OTH REF: 001

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LEBEDEV, I. V.

21397 LEBEDEV, I. V. Rasprostraneniye elektromagnitnykh voln-povolnovoy
zapolnennomy plazmoy. Trudy mosk. energet. IN-TA Im. Molotova, Vyp. 4, 1949,
S. 21-26.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949.

LEBEDEV, Igor' Vsevolodovich, dotsent

[The technique and instruments for ultrahigh frequency] Tekhnika i pribory sverkhvysokikh chastot. Moskva, Moskovskii energ. institut im. V.M.Molotova, Sec. 2. [Wave guide technique and hollow resonators] Tekhnika volnovodov i polykh rezonatorov. 1956. 174 p.

(Wave guides)

(MIRA 9:9)

(Electric resonators)

9(4)

SOV/112-59-1-1581

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 1,
pp 222-223 (USSR)

AUTHOR: Lebedev, I. V.

TITLE: Microwave Gas-Discharge Devices

PERIODICAL: V sb.: Uspekhi elektrovakuum. tekhniki, M.-L., 1956, pp 94-125

ABSTRACT: With microwaves and low electric field strength, the amplitude of oscillations of positive ions in an ionized gas is small — the ions can be considered practically at rest. For this reason, only the displacement current and the current induced in the electrodes as a result of electron oscillations are considered in the discharge current. The maximum conductance of an ionized gas corresponds to the conditions when the driving frequency is equal to the average number of collisions between electron and neutral gas molecules. This condition permits creating devices having an inertialess control of oscillatory circuits by simply varying the electron concentration. The most

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Microwave Gas-Discharge Devices

widely used device is a centimeter-band gas-discharge radar TR switch. According to their principle of operation and purpose, the switches can be subdivided into these five groups: (1) TR tubes; (2) ATR tubes; (3) pre-TR tubes used in high-power transmitters; (4) broad-band TR tubes having a fixed tuning; (5) broad-band ATR tubes having a low Q-factor. Other types of microwave gas-discharge devices are: (1) a switch-attenuator for low-level power; (2) a source of ions; (3) a fast-particle counter; (4) an oscillator based on electron-ion plasma oscillations. Twenty illustrations. Bibliography: 13 items.

I.M.V.

Card 2/2

LEBEDEV, I.V.

"Introduction to the electronics of superhigh frequencies." V.F.Kovalenko.
Reviewed by I.V.Lebedev. Radiotekh. i elektron. 1 no.2:262-263 P '56.
(Electron tubes) (Kovalenko, V.F.) (MIRA 9:7)

LEBEDEV, I.V.

621.372.41 : 621.372.8

2355

Resonator in the Form of a Cut-Off
Waveguide. I. V. Lebedev & E. M. Ilyin

Gyusai. (Radiofizika i Elektronika, Oct.
1956, Vol. 1, No. 10, pp. 1303-1308.) The
input impedance of a uniform waveguide
operating below cut-off frequency is cal-
culated. The feasibility of synthesizing a
resonator, with characteristics similar to a
parallel tuned circuit, from the waveguide
and a reactive diaphragm is shown. The
resonator Q is low.

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112-57-7-15730

Translation from: Referativnyy zhurnal, Elektrotehnika, 1957, Nr 7, p 271 (USSR)

AUTHOR: Lebedev, I. V.

TITLE: Losses in a Waveguide Having a Finite-Admittance Window in its Wall
(Poteri v volnovode pri nalichii v yego stenke okna s konechnoy provodimost'yu)

PERIODICAL: Tr. Mosk. energ. in-ta, 1956, Nr 18, pp 369-379

ABSTRACT: A calculation is presented of losses in a rectangular waveguide having an imperfectly conducting rectangular window in its narrow or wide wall; mode H_{10} wave is considered. The relationships are obtained between the losses and the window size, the method of its insertion in the waveguide and the size of the guide, and also the influence of λ/λ_{crit} on the losses. Equivalent circuits are presented. The calculation is extended over the case of a nonlinear admittance by the window when it is filled with an electron-ion plasma. By using the equations developed and knowing the loss values from experiment, the value of electric-field strength in the plasma of an independent discharge filling the window can be evaluated. From the author's summary.

Card 1/1

LEEDEEV, I.V., dotsent, kand.tekhn.nauk

Thin absorbing film in wave guides. Trudy MEI no.27:281-288
'58. (MIRA 13:4)

(Wave guides)

LEBIDEV, I.V., dotsent, kand.tekhn.nauk

Use of an auxiliary pulse discharge for raising the protective
quality of microwave discharge tubes. Trudy MEI no.27:289-293
'58. (MIRA 13:4)
(Microwaves) (Electron tubes)

9.3260

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A052/A001

Translation from: Referativnyy zhurnal, Elektrotehnika, 1959, No. 12, p. 7,
23967

AUTHOR: Lebedev, I. V.

TITLE: On One Fallacy Connected With Electrodynamics of Moving Systems

PERIODICAL: Tr. Mosk. energ. in-ta, 1958, No. 27, pp. 340-342

TEXT: V. M. Vakhnin (see RZhE, 1957, 4423) in proving, that in an oscillat-
ing system during its motion a type of a standing wave is established, different
from that in a "resting" system, has neglected the Lorentz-Einstein transforma-
tion. The conclusions arrived at by Vakhnin are contradictory to experimental
data and the theory of relativity. *h*

A. E. M. *✓B*

Translator's note: This is the full translation of the original Russian abstract.

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LEBEDEV, I.V.

Questions on the use of ultrahigh frequencies in industrial
electronics. Nauch.dokl.vys.shkoly; radiotekh.i elektron. no.1:
11-15 '59. (MIRA 12:10)

1. Kafedra elektronnykh priborov Moskovskogo energeticheskogo
instituta.

(Microwaves)

LEBEDEV, I.V.

"Theory of electronic devices for superhigh frequencies" by
S.D.Gvozdozer. Reviewed by I.V.Lebedev. Radiotekh.i elek-
tron. 4 no.3:553-554 Mr '59. (MIRA 12:4)
(Electronics) (Gvozdozer, S.D.)

TYAGUNOV, G.A., prof.; AZAT'YAN, A.D.; ALEKSANDROV, A.G.; ANTIK, I.V.;
VASIL'YEV, N.N.; ZHIGAREV, A.A.; KORSHUNOV, S.I.; LEBEDEV, I.V.;
NILENDER, R.A.

[Electronic vacuum devices; operating conditions, parameters,
and characteristics] Elektrovakuumnye pribory; rezhimy,
parametry i kharakteristiki. Moskva, 1960. 20 p. (Sborniki
rekomenduemykh terminov AN SSSR, Kom.tekhn.terminologii, no.54)
(MIRA 14:4)

1. Akademiya nauk SSSR. Komitet tekhnicheskoy terminologii.
(Electron tubes)

LABEDEV, Igor' Vsevolodovich; DEVYATKOV, N.D., prof., red.; SHAMSHUR, V.I., red.; BORUNOV, N.I., tekhn. red.

[Super-high frequency engineering and equipment] Tekhnika i pribory sverkhvysokikh chastot. Pod red. N.D.Deviatkova. Moskva, Gos. energ. izd-vo. Vol.1. [Super-high frequency engineering] Tekhnika sverkhvysokikh chastot. 1961. 510 p. (MIRA 14:11)

1. Chlen-korrespondent AN SSSR (for Devyatkov).
(Microwaves)

36940
S/142/61/004/006/001/017
E192/E382

9.2570

AUTHORS: Lebedev, I.V. and Ch'en Chung-mou

TITLE: Possibilities of using UHF oscillators as regenerative amplifiers.
II. Amplifiers based on quadripole circuits

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 4, no. 6, 1961, 629 - 639

TEXT: Part I of this work was devoted to the investigation of bipole UHF amplifiers (see preceding issue of this journal). The analysis is extended in the following to the case where the resonance system comprises not one but two coupling elements. Such amplifiers can be constructed on the basis of an under-excited UHF oscillator (such as magnetron or klystron) if its resonance system has discrete oscillation modes. The equivalent circuit of the amplifier is shown in Fig. 2a, where Y_{01} and Y_{02} denote the characteristic admittances of the output and input waveguides, G and jB are the conductance and susceptance of the oscillatory system

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Possibilities of

with respect to the operating gap ; the electron admittance at the operating frequency has a resistive component G_{ω} and a reactive component jB_{ω} . The coupling elements are in the form of two ideal transformers T_p , whose transformation ratios are k_1 and k_2 . It is shown that the gain of such a system can be expressed as:

$$K = 10 \lg \frac{4 \frac{Q_{BX}}{Q_{BbIX}}}{\left[1 + \frac{Q_{BX}}{Q_o} \left(1 + \frac{G_{\omega}}{G} + \frac{Q_o}{Q_{BbIX}} \right) \right]^2 + \left[\frac{Q_{BX}}{Q_o} \frac{B}{G} + \frac{B_{\omega}}{G} \right]^2} \quad \text{db} \quad (7)$$

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Possibilities of

where Q_o is the quality factor of a "cold" resonator, while Q_{BX} and Q_{BbIX} are its input and output quality factors.

This equation is analyzed and the conditions of maximum gain and maximum matched gain are determined. It is further shown that when the input of the amplifier is matched, its operating bandwidth is expressed by:

$$\left(\frac{\Delta \nu}{\nu_o} \right)_{\cos \eta} = \frac{2}{Q_o} \left(1 + \frac{G_{\eta}}{G} + \frac{Q_o}{Q_{BbIX}} \right) \quad (13) .$$

The effect of the amplifier input mismatch and the effect of the output load is also investigated and it is shown that the modulus of the reflection coefficient for $B + B_{\eta} = 0$ is given by:

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$$|\Gamma| = \frac{\left| 1 - \frac{Q_{BX}}{Q_o} \left(1 + \frac{G_{\Sigma \Pi}}{G} + \frac{Q_o}{Q_{BbIX}} \right) \right|}{\left| 1 + \frac{Q_{BX}}{Q_o} \left(1 + \frac{G_{\Sigma \Pi}}{G} + \frac{Q_o}{Q_{BbIX}} \right) \right|} \quad (15) .$$

The formulae derived are used to construct a number of graphs. It is concluded from the analysis that there are no particular difficulties in achieving gains of 20 - 30 db by means of either the bipole or quadripole-type amplifiers. However, for the same frequency bandwidth, other conditions being equal, a bipole amplifier is preferable to the quadripole type. Secondly, since the work of the quadripole amplifier is largely dependent on the matching of its output load, it is necessary to use a nonreciprocal element between the amplifier and the output load.

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Consequently, one of its advantages as compared with a bipole amplifier is lost. Furthermore, it is necessary to use non-reciprocal elements when connecting a number of quadripole amplifiers in cascade. The choice of the input and output coefficients in the quadripole amplifier is quite critical and it is necessary to provide suitable control elements for this purpose. It is necessary to employ devices having a high negative admittance to obtain a wide operating-frequency band. From this point of view, oscillators and regenerative amplifiers for UHF have to meet the same efficiency requirements. The search for suitable physical systems can be extended not only to the electron beams and solids but also to electron-ion plasmas (Ref. 6 - J. Schneider - ZS für Naturforschung, 1960, 15 a, no. 5, 6, 484). There are 7 figures.

ASSOCIATION: Kafedra elektronnykh priborov Moskovskogo ordena Lenina energeticheskogo instituta (Department of Electron Devices of the Moscow Order of Lenin Power-engineering Institute)

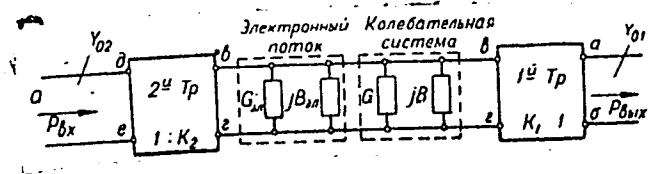
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SUBMITTED: April 8, 1961

Fig. 2a:



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34260

S/142/61/004/005/003/014

E192/E382

9,3240 (1040, 1139, 1154)

AUTHORS: Lebedev, I.V. and Ch'en Chung-mou

TITLE: On the possibility of using UHF oscillators as regenerative amplifiers. Part 1. Amplifiers based on bipole circuits

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v.4, no. 5, 1961, 560 - 567

TEXT: Two types of regenerative amplifiers are possible, depending on the method of applying the input signal and taking the amplified output signal. In the first type, the oscillatory circuit of the amplifier contains only one coupling element, i.e. it operates as a bipole. Separation of the input and output signals is achieved by employing a non-reciprocal element such as a circulator. In the second type, the oscillator employed is connected as a quadripole and contains two coupling elements. Only a bipole amplifier is considered in the following and it is assumed that its UHF oscillator circuit over a limited frequency range can be represented by a parallel circuit $Y = G + jB$. The effect of the electron

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beam in such a system is represented by a complex electron admittance $Y_{\Sigma} = G_{\Sigma} + jB_{\Sigma}$. The amplification coefficient K of the system is defined by:

$$K = 10 \lg \frac{P_{Bb1X}}{P_{BX}} = 10 \lg \frac{P_{OTp}}{P_{na\Delta}} \quad (1)$$

where P_{BX} and P_{Bb1X} denote the powers at the input and output of the circulator which are equal to the power of the incident wave $P_{na\Delta}$ and the reflected power P_{OTp} . The equivalent circuits of the system are illustrated in Fig. 2. It is shown that the complete expression for the gain is in the form of:

Card 2/0 5

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/142, 004/005/003/014

192/

On the possibility of

$$K = 10 \lg |F|^2 = 10 \lg \left(\frac{\left(\frac{Q_0}{Q_{\text{внеш}}} - 1 - \frac{G_{\text{вн}}}{G} \right)^2 + \left[\frac{B_{\text{вн}}}{G} + 2Q_0 \left(\frac{\nu}{\nu_0} - 1 \right) \right]^2}{\left(\frac{Q_0}{Q_{\text{внеш}}} + 1 + \frac{G_{\text{вн}}}{G} \right)^2 + \left[\frac{B_{\text{вн}}}{G} + 2Q_0 \left(\frac{\nu}{\nu_0} - 1 \right) \right]^2} \right) \quad (8)$$

where Γ is the reflection coefficient of the system,
 Q_0 is the quality factor of the oscillatory system, and
 $Q_{\text{вн}}$ is the "external" quality factor referred to
the section a of Fig. 2,
 ν_0 is the resonance frequency of the system, and
 ν is the frequency of the amplifying signal.
The half-power bandwidth of the amplifier is defined by:

$$\frac{\Delta \nu}{\nu_0} = \frac{1}{Q_{\text{внеш}}} \left(\frac{1 - \left(\frac{Q_{\text{внеш}}}{Q_0} \right)^2 \left(1 + \frac{G_{\text{вн}}}{G} \right)^2}{\sqrt{8 - \left[\frac{Q_{\text{внеш}}}{Q_0} \left(1 + \frac{G_{\text{вн}}}{G} \right) + 3 \right]^2}} - \frac{Q_{\text{внеш}} B_{\text{вн}}}{Q_0 G} \right) \quad (12)$$

Card 3/05

34260
S/142/61/004/005/003/014
E192/E382

On the possibility of

The above formulae are employed to construct the graphs illustrating the dependence of gain and bandwidth on Q_o/Q_{BH} . The effect of the load mismatch on the gain of the amplifier is also analyzed and it is shown that self-excitation of the system is possible if considerable mismatch is allowed. It is concluded from the analysis that the gain of the bipole amplifiers with negative admittance can be arbitrarily high but, in practice, due to the mismatch of the load, the gain is limited to 30 db. Secondly, if the influence of other unstabilizing factors is taken into account, it is necessary to limit the gain of the amplifier to about 20 - 30 db. It is necessary to secure the ratio of the electron conductance to the conductance of the resonance circuit of the order of 100 or more to obtain a narrow bandwidth ($< 2-3\%$ of the centre frequency). The problem of noise in regenerative amplifier appears to be somewhat obscure in spite of the available experimental data (Ref.4: K. Ishii - Electronics, 1960, 33, no. 2, 56; Ref. 6: K. Ishii - IRE Trans., 1960, Card 4/05)

On the possibility of

31260

S/142/61/004/005/003/014
E192/E382

MTT-8, no. 3, 291) which show that a noise figure of the order of 5 db can be achieved. The disadvantage of the above amplifier lies in the fact that it has to employ a circulator. There are 7 figures and 8 references: 2 Soviet-bloc and 6 non-Soviet bloc. The four latest English-language references mentioned are: Ref. 2: K. Ishii - PIRE, 1957, 45, no. 5, 687; Refs. 4 and 6 (quoted in text); Ref. 5: K. Ishii - Electronics, 1960, 33, no. 12, 71.

ASSOCIATION: Kafedra elektronnykh priborov Moskovskogo ordena Lenina energeticheskogo instituta (Department of Electron Devices of the Moscow Order of Lenin Power-engineering Institute)
SUBMITTED: January 19, 1961

Card 5/15

LEBEDEV, I.V.; LEBEDEVA, V.V.

Operation of a "through" amplifier with negative conductance
in microwave and optical frequency ranges. Radiotekh. i
elektron. 8 no.2:221-230 F '63. (MIRA 16:2)
(Amplifiers (Electronics)) (Microwaves)

LEBEDEVA, V.V.; LEBEDEV, I.V.

Through-type optical amplifiers. Opt. i spektr. 15 no.3:
413-420 S '63. (MIRA 16:10)

LEBEDEVA, V.V.; LEBEDEV, I.V.

Reflecting and absorbing capacities of metallic films. Opt. i
spektr. 18 no.1:115-118 Ja '65.

(MIRA 18:4)

L 23268-66 FBD/EWT(1)/EWT(m)/EEC(k)-2/T/EWP(t)/EWP(k)/EWA(h) IJP(c) WG/JD
 ACC NR: AP6011569 SOURCE CODE: UR/0051/66/020/003/0501/0503

AUTHOR: Lebedeva, V. V.; Odintsov, A. I.; Lebedev, I. V.; Andriyakhin, V. M.;
Gudovich, E. S.; Ponomareva, I. P.

ORG: none

TITLE: An He-Ne laser amplifier with feedback

SOURCE: Optika i spektroskopiya, v. 20, no. 3, 1966, 501-503

TOPIC TAGS: laser system, gas laser, helium neon laser, laser amplifier, feedback laser

ABSTRACT: An He-Ne laser amplifier with feedback (at $\lambda = 0.633 \mu$) is described and illustrated (see Fig. 1). Master oscillator 1 and amplifier 2 are placed parallel to

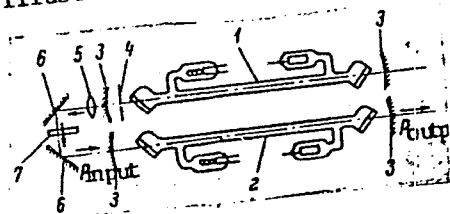


Fig. 1. Schematic of the device

1 - Master oscillator; 2 - amplifier; 3 - resonator mirror, radius of curvature 1160 mm; 4 - diaphragm for separating TEM₀₀ modes; 5 - coincidence lens; 6 - rotating mirrors; 7 - light filter.

UDC: 621.375.9:535

Card 1/2

L 23268-66

ACC NR: AP6011569

each other on a heavy bench. Radiation from 1 is attenuated by neutral filters by 10^4 or 10^3 times to provide a bypass from 1 to 2 and to avoid amplifier saturation. Lens 5 is used to produce coincidence of the wavefront, incident on 2, with the input mirror surface. The ratio of partial pressures of He and Ne in the amplifier is 17:1, resulting in a weak dependence of gain and activity of the medium on variations in the discharge current. The maximum gain of the system, measured in terms of the magnitude of the output signal from the amplifier when the oscillator frequency and the center of the amplifier passband are coincident, is 1000 (30 db). The misalignment of the amplifier axis with the direction of the incident wave, which affects gain, was not more than 3 sec of arc. The values of gain observed experimentally (mirrors: 99 and 98% reflective) and theoretically (mirrors: ideal dielectric) are in good agreement. Orig. art. has: 1 formula and 3 figures. [YK]

SUB CODE: 20/ SUBM DATE: 06Jul65/ ORIG REF: 003/ OTH REF: 003/ ATD PRESS: 4230

Card 2/2 *UUR*

L 22972-66 EWT(m)/EWP(j)/T/ETC(m)-6 IJP(t) WW/GS/RM
ACC NR: AT6008656 (A) SOURCE CODE: UR/0000/65/000/000/0124/0136
40
B+/

AUTHOR: Lebedev, I. V. (Kiev)

ORG: none

15
TITLE: The use of wire strain gages for testing internal stresses in laminated
plastics at high temperature

SOURCE: Vsesoyuznoye soveshchaniye po voprosam staticheskoy i dinamicheskoy
prochnosti materialov i konstruktsionnykh elementov pri vysokikh i nizkikh
temperaturakh, 3d. Termoprochnost' materialov i konstruktsionnykh elementov
(Thermal strength of materials and construction elements); materialy
soveshchaniya. Kiev, Naukova dumka, 1965, 124-136

TOPIC TAGS: glass plastic, material testing, strain gage, glass textolite,
thermal property

ABSTRACT: The results of an experimental study of the internal stresses of
glass plastics are presented. The experiments were conducted on glass textolite,
components of which are a glass fabric and phenolformaldehyde resin. The tests
featured the use of wire strain gages with wire leads. The strain measurement

Card 1/2

L 22972-66

ACC NR: AT6008656

apparatus is arranged in a fashion permitting it to be placed between layers of phenolformaldehyde-impregnated glass fabric used in preparing square plates of glass plastic test specimens. The dimensions of a specimen are 400 x 400 x 30 mm. The longitudinal axes of the strain gages were arrayed along two mutually perpendicular directions corresponding to the directions of the sides of the plate. A slightly different arrangement of the strain gages is described for the testing of parts of a more complex form. The strain gages are used to obtain the necessary data for determining the direction and magnitudes of principal stresses in the test specimens. In this capacity the gages are used in conjunction with simple formulae presented by A. M. Turichin and P. V. Novitskiy (Provolochnyye preobrazovately i ikh tekhnicheskoye primeneniye, M. Gosenergoizdat, 1957). A detailed discussion of the construction and use methodology of the gages is given, and the results of their use in specific experimental circumstances are described. Orig. art. has: 7 figures.

SUB CODE: 11, 14/ SUBM DATE: 19Aug65/ ORIG REF: 004

Card 2/2

L 27253-66 EWA(h)/EWT(1) JM

ACC NR: AP6009852

SOURCE CODE: UR/0413/66/000/004/0047/0047

AUTHORS: Shadrin, I. A.; Lebedev, I. V.; Yestrebov, A. B.

ORG: none

TITLE: Noise generator.²⁵ Class 21, No. 178910

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 47

TOPIC TAGS: noise generator, gas discharge, waveguide

ABSTRACT: This Author Certificate presents a noise generator containing a waveguide device and a gas discharge device. To produce a low-voltage arc at constant current for producing a high noise temperature and a limited coupling of the gas discharge device to the high-frequency output channel, the generator is in the form of a coaxial resonator with a low loaded Q-factor. The outer conductor is the anode and also the vacuum shell of the device (see Fig. 1). A section of the inner conductor placed in the region of the maximum of the high-frequency field of the active form of oscillation is the heated cathode. One end of the resonator is connected to the waveguide with a coaxial-waveguide pin junction. A noncontacting plunger providing a short circuit is placed at the other end of the resonator.

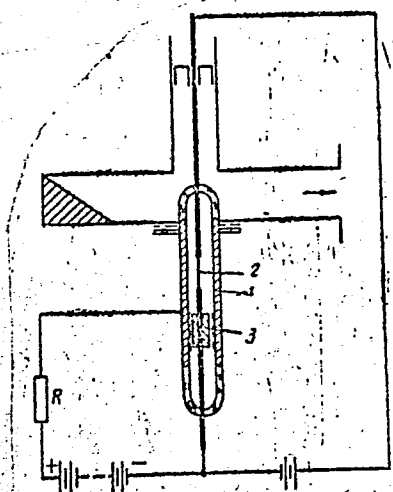
Card 1/2

UDC: 621.373 537.525

L 27253-66

ACC NR: AP6009852

Fig. 1. 1 - anode; 2 - section of
inner conductor; 3 plunger.



Orig. art. has: 1 diagram.

SUB CODE: 09/ SUBM DATE: 11Feb63

Card 2/2 CC

UR

ACC NR: AM5010308

BOOK EXPLOITATION

Lebedev, I.V.

Superhigh-frequency engineering and instruments. v. 2: Superhigh-frequency electronic vacuum devices (Tekhnika i pribory sverkhvysokikh chastot. t. II: Elektrovakuumnyye pribory sverkhvysokikh chastot) Moscow, Izd-vo "Energiya," 1964. 0615 p. illus., biblio. 10,000 copies printed.

TOPIC TAGS: superhigh frequency, SHF amplifier, generator, triode tube, klystron, magnetron, gas discharge, traveling wave tube, electronic engineering

PURPOSE AND COVERAGE: This textbook is intended for students at institutes offering courses in power engineering, electrical engineering, and electronics, as well as for engineers and technical personnel in industry and scientific research institutions. The text discusses the physical principles of superhigh-frequency electronics and describes the basic types of superhigh-frequency electronic (vacuum) devices, including triodes, tetrodes, floating-drift and reflex klystrons, magnetron oscillators, and tubes with direct and backward waves of the O and M types. It also describes the basic types of superhigh-frequency gas-discharge devices.

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Editor's preface [N.D. Devyatkov, Prof., Corresponding Member, Academy of Sciences SSSR]

UDC: 621.385.6

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ACC NR: AM5010308

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 - Ch. III. General problems of superhigh-frequency electronic generators and amplifiers.
Application of the equivalent circuit method -- 120
 - Ch. IV. Superhigh-frequency triodes and tetrodes -- 177
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 - Ch. VI. Magnetrons -- 349
 - Ch. VII. Traveling-wave tubes -- 453
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 - Ch. IX: Concluding remarks -- 608
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- SUB CODE: 09/ SUBM DATE: 05Aug64/ ORIG REF: 038/ OTH REF: 024
- Card 2/2

KUBKIN, V.I.; LEVIN, I.V.

Calculation of friction resistance during its longitudinal movement
of a thread in the air. law. yz. uchenyia; tekh. tekhn. nauk 1965
64:72 165. (MIRA 12:5

1. Moskovskiy orient Lenin gosudarstvennyy institut.

LEHNEFV, I.V., inch.

Phosphide autentic in cast iron. Army 61 19 no. 1:
10-13 '63. (MIRA 17:7)

LEBEDEV, I.V., kand. tekhn. nauk; BAKLASTOV, A.M., kand. tekhn. nauk;
SERGAZIN, Zh.F., inzh., dissertant; MAYAKIN, V.P., inzh.

Evaluation of the origin of turbulence in heat exchanger
channels. Teploenergetika 11 no.12:82-84 D '64 (MIRA 18:2)

1. Moskovskiy energeticheskiy institut.

L 01263-66 EWT(1) LJP(c)

ACCESSION NR: AP5020805

UR/0048/65/029/008/1385/1390

AUTHOR: Pilipovich, V. A.; Lebedev, I. V.; Tursunov, N. I.

TITLE: Concerning the phosphorescence of organic phosphors Report, 13th Conference on Luminescence held in Khar'kov 25 June to 1 July 1961

SOURCE: AN SSSR. Izvestiya, Seriya fizicheskaya, v. 29, no. 8, 1965, 1385-1390

TOPIC TAGS: luminescence, phosphorescence, light absorption, metastable state, light intensity

ABSTRACT: The authors have investigated the absorption, fluorescence, and phosphorescence under intense illumination at room temperature and liquid air temperature of rock candy activated with tryptaflavine, acridine orange, and rhoduline orange, and boron phosphors activated with fluorescein. Illumination was provided by the focused light of a 500 watt mercury arc. The actual intensity at the specimen is not given. The fluorescence rise times and phosphorescence decay times were measured with the aid of light flashes, obtained with an "electromagnetic shutter", having rise times of 0.1 millisecc. The data are analyzed in terms of a theory given by B.I. Stepanov (Dokl. AN BSSR, 5, No. 11, 1961). At room temperature the increase in optical density due to the intense illumination was propor-

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L 01263-66

ACCESSION NR: AP5020805

3

tional to the intensity, in accord with the theory. At liquid air temperatures the optical density increased more rapidly with increasing intensity at low intensities than at high intensities. The absorption at the maximum of the first triplet-triplet band was measured at a number of temperatures between room temperature and -186°C . The increased optical density in this band and the phosphorescence decay time depended similarly on the temperature. The phosphorescence decay time of tryptaflavine in rock candy was 0.5 sec, independent of the illumination intensity. The number of particles in the metastable state was estimated from the intensity of the first triplet-triplet absorption band. The reciprocal of the growth time for the number of particles in the metastable state increased linearly with the illumination intensity. The equilibrium value of the number of particles in the metastable state increased linearly with illumination intensity at both room temperature and liquid air temperature. Orig. Art. has: 10 formulas and 6 figures.

ASSOCIATION: Institut fiziki Akademii nauk BSSR (Physics Institute, Academy of Sciences, BSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: OP, GC

NO REF SOV: 006
Card 2/2

OTHER: 004

L 21666-66 FBD/EM(1)/EEC(k)-2/T/EM(k)/EMA(h) IJP(c) 31

ACC NR: AP6001929

SOURCE CODE: UR/0142/65/008/006/0625/0631

AUTHOR: Lebedev, I. V.

ORG: none

TITLE: Border problems in the development of laser and SHF engineering

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 6, 1965, 625-631

TOPIC TAGS: laser, superhigh frequency

ABSTRACT: Some border problems of laser engineering, quantum radiophysics, and SHF electronics are briefly reviewed on the basis of a few 1963-65 Soviet and 1963-64 Western sources. New requirements in SHF electronics which can be traced to laser developments are discussed, as well as the mutual penetration of the methods used in both fields. Specifically, these points are brought forward: development of photo-electric devices for measuring laser phenomena; hybrid TW tube; gas discharge at optical-band frequencies; analogy between quantum oscillators and SHF oscillators (also amplifiers); laser load characteristics; multistage laser oscillators; special methods and devices for measuring laser operation; SHF-modulation of optical signals; diagnoses of dense plasmas. Orig. art. has: 3 figures.

SUB CODE: 20, 09 / SUBM DATE: 13May65 / ORIG REF: 007 / OTH REF: 010

Card 1/1

UDC: 621.385+621.388

L 21846-66 EWA(h)/EWT(1)

ACC NR: AP6010718

SOURCE CODE: UR/0142/66/009/001/0008/0014

AUTHOR: Lebedev, I. V.; Betskiy, O. V.

ORG: none

TITLE: Increasing the gain of M-type microwave amplifiers 25

SOURCE: IVUZ. Radiotekhnika, v. 9, no. 1, 1966, 8-14

TOPIC TAGS: amplifier design, magnetron, platinotron

ABSTRACT: The author reviews the factors which determine the efficiency of M-type crossed-field microwave amplifiers, in particular the magnetron configuration. Efforts to increase gain are concentrated on lowering the minimum input power required to form cycloidal electron trajectories in the interelectrode space. To increase efficiency without sacrificing gain, special electrode configurations must be resorted to, two examples of which are shown schematically in Fig. 1. The second scheme, which

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UDC: 621.385633.24

L 21846-66

ACC NR: AP6010718

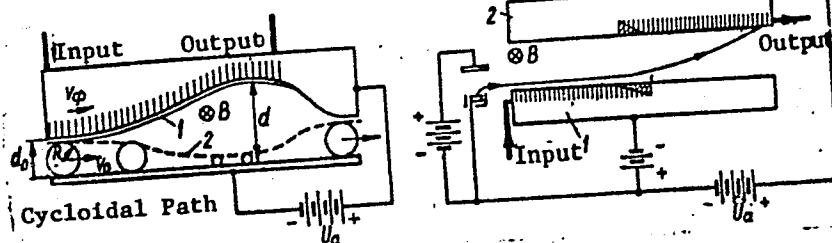


Fig. 1. M-amplifier variants

uses an impedance section on the cathode as well as on the anode, is preferable for its simpler design and also because it provides good suppression of parasitic feedback. Though improved designs of the type suggested may not approach the amplification attainable by O-type amplifiers, it should be possible to get M-types up to a gain of 40—50 db. Orig. art. has: 4 figures and 8 formulas. [SH]

SUB CODE: 09, 17/ SUBM DATE: 13May65/ ORIG REF: 002/ OTH REF: 010/ ATD PRESS: 4227

Card 2/2 nst

LEBEDEV, I.Ye., kandidat meditsinskikh nauk

Reflex reactions of the uterus following exposure of the carotid sinus region to actions of physical and chemical agents. Akush. i gin. no.5:6-14 S-O '54. (MLRA 7:12)

1. Iz Instituta akusherstva i ginekologii (dir. L.G.Stepanov) nauchnyy rukovoditel' prof. P.A.Beloshapko) Ministerstva zdравo-okhraneniya SSSR.

(UTERUS, physiology,

reflex response to stimulation of carotid sinus in animals)

(CAROTID SINUS, physiology,

eff. of stimulation on reflex responses of uterus in animals)

LEBEDEV, I.Ye.

Effect of penicillin on uterine contraction. Akush. i gin. 32 no.5:
11-14 S-O '56. (MIRA 10:11)

1. Iz Instituta akusherstva i ginekologii (dir. L.G.Stepanov)
Ministerstva zdavookhraneniya SSSR.
(UTERUS, eff. of drugs on
penicillin, eff. on contractility)
(PENICILLIN, eff.
on contractility of uterus)

VIKTOROV, Yuriy Vsevolodovich; GDALIN, Aleksandr Davidovich;
LEBEDEV, Ivan Yevstifeyevich; SOBOLEV, N.N., red.

[Introduction of progressive practices and highly efficient equipment at the "Rovnoe" granite quarry] Vnedrenie progressivnoi tekhnologii i vysokoproizvoditel'nogo oborudovaniia na granitnom kar'ere "Rovnoe." Leningrad, 1964. 13 p. (Leningradskii dom. nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Stroitel'noe proizvodstvo, no.2) (MIRA 17:7)

LEBEDEV, I.Z., kand.sel'skokhoz.nauk

Sowing soybean along with gramineous crops. Zhivotnovodstvo 23
no.2:15-19 F '61. (MIRA 15:11)
(Soybean) (Forage plants)

PERSHIN, M., inzhener-polkovnik; LEBEDEV, K., mayor

Stabilizing saturated soils. Tyl i snab.Sov.Voor.Sil 21 no.3:79-82
Mr '61. (MIRA 14:6)

(Soil stabilization)

LEBEDEV, K.

Automobile industry workers will not let down. Za rul. 20 no.7:7 J1
'62. (MIRA 15:7)

1. Predsedatel' pervichnoy organizatsii Dobrovol'nogo obshchestva
sodeystviya armii, aviatsii i flotu Gor'kovskogo avtozavoda.
(Education, Military)

LEEDEV, Katja [translator]

From foreign periodicals. Nova proizv 13 no.4:323-328 S '62.

LAZAREVA, S.Ye.; KOROLEVA, N.D.; KIRILLOV, L.N.; FRIDLYAND, G.I.;
SHAPIRO, L.M.; LEHEDEV, K.A.; PEKH, Yu.Yu.; MEKLER, E.A.

Spinning of chemically treated (boiled and bleached) roving.
Tekst. prom. 19 no.7:42-45 J1 '59. (MIRA 12:11)
(Textile finishing)

LEBEDEV, K.A.; STARIKOV, V.N., red.; MAKAROV, I.M., tekhn.red.

[Manufacture of flax yarns from boiled and bleached roving]
Vyrabotka l'nianyykh priazh iz varenoi i belenoi rovnitay.
Smolensk, Sovet narodnogo khoz.Smolenskogo ekon.administra-
tivnogo raiona, 1960. 11 p. (MIRA 13:11)

1. Moscow. Vystavka dostizheniy narodnogo khozyaystva SSSR.
2. Glavnyy inzhener Smolenskogo l'nokombinata (for Lebedev).
(Yarn) (Flax processing machinery)

LEBEDEV, K.A., inzh.

Formula ETs-24 nitrile rubber coating for cotton machines. Tekst.
prom. 21 no.9:45 S '61. (MIRA 14:10)

1. Nachal'nik laboratorii bumagopryadil'noy fabрики Glukhovskogo
kombinata imeni V.I.Lenina.
(Cotton machinery) (Rubber coatings)

ACC NR: AT6005060 (N) SOURCE CODE: UR/0000/65/000/000/0127/0135

AUTHOR: Lebedeva, G. N.; Lebedev, K. A.; Puzyrev, N. N. (Doctor of technical sciences)

ORG: none

TITLE: Selection of seismic waves by polarization for sources with horizontal directivity

SOURCE: AN SSSR. Sibirskoye otdeleniye. Institut geologii i geofiziki. Metodika seysmorazvedki (Methods of seismic prospecting). Moscow, Izd-vo Nauka, 1965, 127-135

TOPIC TAGS: seismology, seismic wave selection, polarization, phase inversion, signal filtration, TRANSVERSE WAVE, SEISMOGRAPHY

ABSTRACT: A method is proposed for selecting transverse waves (irrespective of the direction of polarization) out of all other waves (longitudinal exchange waves, multiple waves, etc.) arriving at a receiver. This selection is based on the nature of their polarization at the source. The significant property of the transverse waves is that when there is a change of 180° in the direction of the effective force, the phase variations in the impulse of the transverse wave also change by 180° (phase inversion), while other types of waves remain unchanged.

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ACC NR: AT6005060

The model used as an example is a horizontally layered medium. Two cases are investigated: 1) a horizontal force directed perpendicular to the profile (Y-action) and 2) a horizontal force directed along the profile (X-action). Two identical horizontal forces or moments of rotation acting in opposite directions produce vibrations which are recorded by a seismograph or group of seismographs. Pulses from transverse waves caused by both actions are added, while pulses from all other waves are subtracted (addition of opposite phases). This method was tested in the field in the summer of 1963. Several experiments were conducted on a crystalline basement covered by about 20 m of alluvial deposits. Longitudinal head, transverse, and exchange waves formed at the basement surface were clearly recorded near the source (100—150 m away). It was found that the effectiveness of this method of adding (or subtracting) vibrations from two oppositely directed actions is determined, to a considerable extent, by the equality of signal amplitude. This method is described as offering new possibilities for separating waves that may not differ in apparent velocities, frequency characteristics, or amplitudes. Orig. art. has: 3 figures. [EO]

SUB CODE: 08/ SUBM DATE: 30Sep65/ ORIG REF: 003/

Card 2/2

LEBEDEV, K.A.

Intra-osseous administration of homologous bone marrow in rats
exposed to fatal irradiation. Med.rad. no.3:24-28 '62. (MIRA 15:3)

1. Iz otdela radiatsionnoy mikrobiologii (zav. -- deystvitel'nyy
chlen AMN SSSR prof. V.L. Troitskiy) Instituta epidemiologii i
mikrobiologii imeni N.F. Gamalei AMN SSSR.
(MARROW...TRANSPLANTATION) (RADIATION SICKNESS)

43485

S/205/62/002/006/012/021

E027/E410

27/12/62

AUTHORS: Kaulen, D.R., Lebedev, K.A., Stefani, D.V.
TITLE: The production of homologous bone marrow chimaeras in guinea-pigs

PERIODICAL: Radiobiologiya, v.2, no.6, 1962, 873-877

TEXT: The authors have investigated the effect of intravenous injection of homologous haemopoietic tissue in guinea-pigs subjected to X-irradiation in a dose of 600 to 650 r. Each recipient received cells from only 1 donor; the total dose in various experiments amounted to 200×10^6 bone marrow cells, 150×10^6 spleen cells or 100×10^6 lymph node cells. The cumulative mortality in treated and control animals at various times up to 33 days after irradiation was tabulated. The control animals had all died by the 18th day but there was a marked delay and reduction in mortality in animals given bone marrow cells intravenously, bone marrow and spleen cells together, and bone marrow cells injected into the femoral epiphysis; the latter method of administration did not show any advantage over intravenous injection. The sparing effect of bone marrow cells

Card 1/2

The production of homologous ...

S/205/62/002/006/012/021
E027/E410

appeared to be abolished if lymphocytes were given at the same time.
There are 2 figures and 1 table.

ASSOCIATION: Institut epidemiologii i mikrobiologii im.
N.F.Gamalei AMN SSSR, Moskva (Institute of Epidemiology
and Microbiology imeni N.G.Gamalei AMS USSR, Moscow)

SUBMITTED: December 27, 1961

Card 2/2

LEBEDEV, K.A. (Moskva)

Identification of bone marrow in bone marrow chimeras; review
of literature. Pat. fiziol. i eksp. terap. 8 no.1:68-75 Ja-F '64.
(MIRA 18:2)

LEBEDEV, K.A.

Effect of cortisone on the development of late reactions in
fatally irradiated rats treated with homologous bone marrow.
Probl. endok. i gorm. 10 no.5:70-74 S-O '64. (MIRA 18:6)

1. Otdel radiatsionnoy mikrobiologii immunologii (zav. - doktor
med. nauk M.A. Tumanyan) Instituta epidemiologii i mikrobiologii
imeni Gamalei (dir. - prof. P.A. Vershilova) AMN SSSR. Nauchnyy
rukovoditel' - doktor med. nauk A.Ya. Fridenshteyn, Moskva.

LEBEDEV, K.A.

Immunological response in X-ray irradiated rabbits following repeated antigen injection. Report No.1: Study of the appearance dynamics and morphology of antibody-containing cells by the "indirect method" of Coons. Radiobiologiya 5 no.1:81-86 (MIRA 18:3) '65.

1. Institut epidemiologii i mikrobiologii imeni Gamalei ANI SSSR, Moskva.

L 54646-65 EWG(j)/EWT(m)
 UR/0205/65/005/002/0237/0242/4
 13
 B
 ACCESSION NR: AP5010345

AUTHOR: Lebedev, K. A.

TITLE: Immunological response of rabbits to an antigen introduced after X-irradiation of animals (Investigation of the dynamics of the appearance and morphology of cells containing antibodies with the use of Coon's "indirect method). Report II.

SOURCE: Radiobiologiya, v. 5, no. 2, 1965, 237-242

TOPIC TAGS: animal, rabbit, single radiation dose, immunization, diphtheria anatoxin, antigen, antibody synthesis, lymph node, cell development

ABSTRACT: In experiments on 6 groups of male rabbits, groups 1 and 2 were X-irradiated (RUM-3 unit, 180 v, 15 ma, filter 0.5 mm Cu and 1 mm Al, focal length 45 cm, air dose 34 r/min) with single 300 and 850 r doses respectively and immunized with a diphtheria anatoxin 24 hrs later. Groups 3 and 4 were X-irradiated with single 300 and 850 r doses respectively 29 days after receiving two diphtheria anatoxin immunizations, and received a third immunization 24 hrs after

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irradiation. Each of the four groups were subdivided into groups A and B. At different periods animals in the A groups were killed for histochemical investigations of the lymph nodes according to Coon's indirect method, and blood samples were taken from the B groups to determine antibody titers. Groups 5 and 6 served as controls. Findings show that irradiation with a single 300 or 850 r dose, 24 hrs before the first or third diphtheria anatoxin immunization significantly reduces antibody synthesis, with synthesis reduced more in response to first immunization. Irradiation before second immunization also reduces the number of antibody synthesizing cells, and tends to retard the appearance of the maximum number of cells containing antibodies and to lengthen the periods of their presence in the lymph nodes after immunization. The following types of cells were found in animals irradiated prior to immunization: hemocytoblasts, plasmatic cells, and lymphocyte-like cells. Also, during certain periods following irradiation excited reticular cells containing antibodies were found. Various degenerative changes of the nucleus and protoplasm were displayed in all cell types. Irradiation appears to affect the mechanisms regulating the cellular composition of the organism and produces differentiation and multiplication changes in

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ACCESSION NR: AP5010345

the remaining uninjured cells. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Institut epidemiologii i mikrobiologii im. N. F. Gamalei AMN SSSR, Moscow (Institute of Epidemiology and Microbiology AMN SSSR)

SUBMITTED: 30Jan64

ENCL: 00

SUB CODE: LS

NR REF SOV: 005

OTHER: 005

Card 3/3

LEBEDEV, K.A. (Moskva)

Primary Immunological response; a study of the dynamics of the appearance and the morphology of antibody-containing cells with the aid of Coon's indirect method. Arkh. pat. 27 no.2:60-67 '65. (MIRA 18:5)

1. Otdel radiatsionnoy mikrobiologii i immunologii (rav. doktor med.nauk K.A. Lebedev) Institut epidemiologii i mikrobiologii imeni Gamalei (rav. akademik-korrespondent AN SSSR prof. P.A. Varskova) MR 0018.

LEBEDEV, K.A. (Moskva)

Secondary immunological response; study on the dynamics of the manifestation and morphology of antibody-containing cells using the indirect Coors' method. Arkh. pat. 27 no.5:30-35 '65. (MIRA 18:5)

1. Otdel radiatsionnoy mikrobiologii i immunologii (zav. - doktor med.nauk M.A.Tumanyan) Instituta epidemiologii i mikrobiologii imeni Semalei (dir. -- chlen-korrespondent AMN SSSR P.A.Vershilova) AMN SSSR.

L 44787-66 EWT(d)/EWT(1)/EWP(1) IJP(c) BB/GG/GW
ACC NR: AP6030611 SOURCE CODE: UR/0413/6/000/016/0101/0101

INVENTOR: Lebedev, K. A.

ORG: none

TITLE: Seismic-oscillation storage device ¹⁶⁰ Class 42, No. 185088

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16.
1966, 101

TOPIC TAGS: seismic wave recorder, seismic wave analysis, seismic
oscillation storage, SEISMOLOGIC INSTRUMENT, SEISMIC WAVE

ABSTRACT: A seismic-oscillation storage device has been designed to record periodically repeated signals on a magnetic tape for subsequent summation. The device consists of seismic-oscillation sensors, amplifiers, phase-shift elements, a tracker, a reference oscillator, a coincidence circuit, a demodulator, magnetic heads, a magnetic-tape drum, and a recorder. To improve the effectiveness of separation of weak seismic signals from a background of uncorrelated noises, a pulse-amplitude modulator is connected to the output of the phase-shifting unit. The modulator is, in turn, connected to a delayed-pulse amplifier. The integrator and a control unit to correct errors in the

UDC: 550.340.19

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L 44787-66

ACC NR: AP6030611

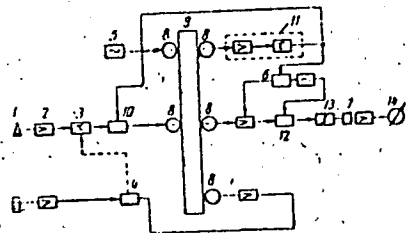


Fig. 1. Seismic-oscillation storage device.

1 - Seismic oscillation sensor; 2 - amplifier; 3 - phase-shifting unit; 4 - tracker; 5 - reference oscillation; 6 - coincidence circuit; 7 - demodulator; 8 - magnetic heads; 9 - drum; 10 - modulator; 11 - delayed-pulse amplifier; 12 - control unit; 13 - integrator; 14 - recorder.

reproduction of the recorded signals are located between the amplifier and demodulator. The arrangement of the components is shown in Fig. 1. Orig. art. has: 1 figure. [DM]

SUB CODE: 08/ SUBM DATE: 23Mar64/ ATD PRESS: 5078

Card 2/2 blg

ACC NR: AT6036610

SOURCE CODE: UR/0000/66/000/000/0252/0253

AUTHOR: Lebedev, K. A.

ORG: none

TITLE: Effect of immunization on the organism's resistance to the radiation spaceflight factor [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 252-253

TOPIC TAGS: cosmic radiation biologic effect, ionizing radiation biologic effect, radiation protection, pharmacology, immunology, radiation tolerance, space medicine

ABSTRACT:

Experiments in recent years have demonstrated the radioprotective effect of various antigens. In this work the lymphoid tissue of animals immunized and then irradiated was studied. It is known that disrupted regeneration in lymphoid and hemogenic tissue is one of the chief effects of radiation. Rabbits were immunized twice with diphtheria anatoxin. Twenty-four hr after the second immunization, rabbits were irradiated on the RUM-3 x-ray apparatus with a dose of 850 r. Rabbits were killed at different periods.

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ACC NR: AT6036610

ods after irradiation, lymph nodes were inspected microscopically, and the total number of cells was estimated.

It was found that after irradiation, multiplication centers of secondary follicles were destroyed together with a large number of small lymphocytes. However, hemocytoblasts outside the multiplication centers were not destroyed, nor were young plasmic cells. Since there were less hemocytoblasts and plasmic cells in nonimmunized animals, sections of lymph nodes from irradiated, nonimmunized animals naturally looked more damaged.

Study of antibody-containing cells demonstrated that the number of these cells did not diminish after irradiation, but increased just as in nonirradiated, immunized animals. In the lymph nodes of irradiated, immunized animals more intense scattered regeneration of the cortex and medullary cords of lymph nodes was observed; this occurs chiefly because of the plasmocytic cells. Earlier recovery of multiplication centers of secondary follicles was also noted, as compared with the lymph nodes of irradiated, nonimmunized animals.

On the basis of these experimental data, it was postulated that accelerated regeneration of lymphoid tissue in immunized, irradiated animals occurs because of the considerable radioresistance of actively multiplying

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ACC NR: AT6036610

hemocytoblasts in the medullary cords, and of young plasmic cells. The number of both types of cells increases sharply prior to irradiation as a result of immunization.

[W. A. No. 22; ATD Report 66-116]

SUB CODE: 06,18 / SUBM DATE: 00May66

Card 3/3

ACC. NR: AP6023317 (A) SOURCE CODE: UR/0210/66/000/002/0088/0099

AUTHOR: Puzyrev, N. N.; Lebedev, K. A.; Lebedeva, G. N.

ORG: Institute of Geology and Geophysics, Siberian Branch AN SSSR, Novosibirsk
(Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR)

TITLE: Excitation of transverse seismic waves by explosions

SOURCE: Geologiya i geofizika, no. 2, 1966, 88-99

TOPIC TAGS: seismology, seismic prospecting, seismic wave, elastic wave, transverse wave, geologic survey

ABSTRACT: The paper deals with seismic methods of geologic survey. The application of transverse waves supplementing the longitudinal elastic waves results in an increased accuracy and greater resolving power in seismic investigations. The authors developed a new method for excitation of transverse waves by producing explosions in cavities with walls suitably covered on five sides by absorbing materials thus creating waves propagating in one well defined direction. Previously, it has been experimentally found that the pressure P (in atm) of the shock wave in a moist ground (sand-clay) is related to the distance from the explosion (in meters) and the weight of the charge (in kg) by the expression

$$P = K \left(\frac{\sqrt[3]{q}}{R} \right)^n \quad (2)$$

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UDC: 650.834

ACC NR: AP6023317

where K and μ are constants characteristic of the material which depend on the amount of moisture. The authors found that the best absorbent is loose sand; gravel is the next best. With suitable amounts of explosives, waves reflected and refracted from layers located at a depth up to 2 km can be located. The method of explosions is superior to excitation of waves by mechanical impact sources. Orig. art. has: 6 figures, 1 table and 6 equations.

SUB CODE: 08/ SUBM DATE: 23Oct65/ ORIG REF: 010/ OTH REF: 001

Card 2/2

LEBEDEV, Konstantin Borisovich; BIBIKOVA. V.I., doktor tekhn.nauk,
retsenzent; EL'KIND, L.M., red.izd-va; MIKHAYLOVA, V.V.,
tekhn. red.

[Rhenium] Renni. 2. izd., perer. i dop. Moskva, Metallurg-
izdat, 1963. 207 p. (MIRA 16:10)

(Rhenium)

LEBEDEV, K.B., kandidat tekhnicheskikh nauk.

Survey of methods for processing materials containing molybdenum.
Vest.AN Kazakh.SSR 11 no.11:83-90 N '55. (MLRA 9:3)
(Molybdenum ores)

AVETISYAN, Kh.K. [deceased]; LEBEDEV, K.B.

Reconstruction of a reverberating furnace for electric smelting.
Vest.AN Kazakh.SSR 12 no.1:58-64 Ja '56. (MLRA 9:5)
(Smelting furnaces)

LEBEDEV, K.B.; PONOMAREV, V.D.

Investigating the process of calcium molybdate precipitation
from solutions of sodium molybdate. Izv. AN Kazakh SSR. Ser. gor.
dela, met., stroi. i stroimat. no. 1:12-22 '57. (MLRA 10:5)
(Molbdenum)
(Sodium molybdates)